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ABSTRACT

Three main factors in textbook selection for distance education--readability, appropriateness, and availability--are examined in detail, and suggestions for adapting standardized texts to the needs of individual groups are provided. Twelve specific criteria are listed for determining the appropriateness of a text and textual factors influencing readability are discussed, including legibility of print, illustrations, vocabulary, conceptual difficulty, syntax, and organization. The use of readability formulae and general results of readability analyses of texts in English, mathematics, science, and social science are briefly described. Specific directions for administering readability analyses are not provided, but a readability checklist is included. Guidelines for producing study guides for textbooks cover arousal and motivation, cognitive structuring, goal definition, signposting, activation, feedback, transfer and retention, and evaluation and assessment. A cost-effective distance education package is outlined that would include a 10-page subject outline, text(s), tape(s) and correspondence. (LMM)

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CRITERIA FOR CHOOSING TEXTBOOKS FOR EXTERNAL STUDENTS

The Main Criteria are:

Appropriateness

Readability

Availability

However, these criteria still leave a great range of choice, so some further comments may be helpful. No single text can be ideally suited to the interests and abilities of all students taking a subject. Furthermore, reliance on a single source of information, ignorance of contrasting views and a belief in the infallibility of the printed word should not be encouraged at a tertiary level. If initiative and self direction are to be encouraged, the selected text will need to be supplemented with additional sources, readings and lecturers' notes.

APPROPRIATENESS

It is difficult to generalise across different subject areas, but there are some widely applicable criteria.

An appropriate text should, in the first instance, relate to the described content and objectives of the subject is is recommended for. Unfortunately, many recommended texts do not have this close relationship. Consequently, either the subject gravitates away from its official description, or the text is only used peripherally, despite its often considerable expense.

If the match between subject and text is assumed, then all other things being equal, a text should be chosen which:

(a) Has a logical scope and sequence.

(b) Reflects recent developments in scholarly research.

(c) Attempts to interpret the methods and results of research as they apply to theories and statements of fact.

(d) Has a conceptual framework that gives it direction and purpose whilst achieving to a consistent theoretical perspective.

(e) Has a content based on identifiable and acceptable assumptions and factual information relevant to any concepts examined.

(f) Is consistent in the use of terminology and concepts without ambiguities, vague terms, and unclear meanings.

(g) Has a defensible scheme for the selection of material.

(h) Attempts to focus on or identify problems and hypotheses that can serve to stimulate student thought and inquiry.

(i) Encourages students to question various observations and related interpretations of reported phenomena.

(j) Promotes the creative discovery of relationships by students and provides 'creative encounters' in the form of cases, experiments, episodes, dilemmas etc.

(k) Deals freely with controversial issues and where feasible, identifies all points of view, and if one point of view is preferred, makes clear on what grounds the conclusion was reached.

(l) Has definitive, detailed and annotated bibliographies, with fully identified statistical data sources.

Some of these criteria are more applicable to particular subjects than to others, and there are no doubt addition factors to be considered in some cases. However, the importance of choosing texts after some informed and rational examination of alternatives, cannot be denied.

READABILITY

When choosing a text particular consideration should be paid to its readability, notwithstanding all arguments about the need to use the language of the discipline being taught and not some ersatz version. If students fail because they cannot read a set text, the book is being used for the purpose of selection rather than instruction. Unreadable texts increase uncertainty in the minds of students. Tolerance of uncertainty varies from student to student, but eventually all will give up reading if a text is too difficult.

It follows that to choose a suitable text it is desirable to attempt to predict its readability and consider just what makes a text difficult. Unfortunately individual judgements have been shown to be unreliable, probably because of lecturers' differing academic experiences. It is strongly advised that judgements about the readability of texts are made in consultation with your colleagues. Even though trialling of texts is virtually impossible, by working together and paying attention to some specific factors, it is possible to extend and make more reliable your professional judgement.

Some points to note when considering readability are:

* It is a combination of reader factors and textual factors so keep the potential reader in mind.

* College students are generally less able readers than lecturers expect them to be, so don't just choose texts for 'A' students.

* Reading ability varies according to task, so take advantage of situations where the students are already familiar with the content of a text.

* Motivational factors tend to be overestimated, so even if the content is inspirational, it can still cause reading difficulties.

* Readability is in part a consequence of textual factors such as:

  - legibility of print
  - illustrations
  - vocabulary
  - conceptual difficulty
  - syntax
  - organisation.

Textual Factors Influencing Readability

It is fruitful to examine these in more detail, as even though they cannot indicate the most appropriate text, they can help in the elimination of those texts which are likely to cause reading difficulties.

(a) Legibility of Print

On page 4 you will see some comments about various types of print. As there are about 2,000 variables involved, it is hard to pick the best type, but remember, unless you have a vastly different cultural background to your students, if you have any difficulties in reading a book, you can be sure they will.

(b) Illustrations

Contrary to popular belief, copious illustrations do not necessarily make texts easier to read. If illustrations, notably in the form of diagrams are an integral part of the text, they will enhance readability by facilitating comprehension. However, illustrations such as photographs may contain much information irrevelant to the learner and may distract him from a highly organised text with carefully selected verbal material.

The size of type is measured in terms of point size; a point is 1/72 of an inch. This is set in *18 point*, i.e. the distance from the top of a *k* to the bottom of a *q* is 18/72 of an inch.

This is an example of *14 point*. Experimental results (see, for example, Watts and Nisbet, 1974, or Tinker, 1963), suggest that for beginning readers a point size in the range 14 point to 18 point is most effective.

This is an example of *12 point*. Type sizes in the range 12 point to 14 point are recommended for seven- to eight-year-old children.

This is an example of *11 point*. This is recommended as being the optimal size of type for ease and speed of reading with adult readers.

This is an example of *10 point*. The range 10 point to 12 point is recommended for children aged from nine to thirteen years.

Finally, this is an example of *8 point*. This is reckoned to be the smallest size of type which should be used for continuous prose, even for adult readers.

THIS IS AN EXAMPLE OF *UPPER CASE* TYPE (I.E. USING CAPITAL LETTERS ONLY). UPPER CASE IS READ MORE SLOWLY BY ADULTS AND MOST PEOPLE DISLIKE READING IT. FLUENT READERS USE OVERALL WORD SHAPE AS A CUE, AND THUS A LINE OF UPPER CASE PRINT CONTAINS FOR THEM LESS INFORMATION THAN ONE WHICH HAS THE ASCENDERS AND DESCENDERS OF LOWER CASE TYPE.

Interestingly enough, poor or beginning readers do not necessarily suffer as a result of this loss of information; in fact the reverse is the case. Upper case letters are better known by poor or beginning readers than are lower case letters, and when read singly they are more legible than lower case. For fluent readers, then, lower case is best, but for poor readers, particularly if it is wished to focus attention on individual letters, upper case may be of value.

This is an example of *sans serif* type. You will notice that it does not have the tiny strokes at the end of such letters as *r, f, l, d, t* and *g*. These strokes are known as *serifs*. A sans serif type appears to have great clarity, but in fact clarity and legibility are not necessarily synonymous, and the experimental evidence does not conclusively support sans serif type.

after Harrison, C. Readability in the Classroom, Cambridge University Press, 1980.

(c) Vocabulary

This is generally considered to be the best single predictor of textual difficulty. Word length (letters or syllables) and word frequency (in common usage), are statistics often used in readability formulae. Some common sense should be used here; texts with unnecessarily complex vocabularies are best avoided where possible, but small words may have obscure meanings.

e.g. 'If he is as I am, I am to be as he is!"

(d) Conceptual Difficulty

As hinted at above, easy words may be used for hard concepts. For example, 'a black hole in space' is easy enough to read, but a difficult concept to grasp at an appropriate level of analysis. Unfortunately there are no criteria for the reliable judgement of conceptual difficulty. Predictions in this area can only be based on knowledge of the nature of students and the academic discipline involved.

Try to bear in mind that there is a theoretical optimum conceptual density for any text. The implications of this involve the ability to distinguish between general texts which can be read systematically and reference texts, invaluable for some purposes, but having a conceptual overload which makes them unsuitable for sustained study.

(e) Syntax

Bearing in mind the need to extend the competencies of the student, texts are more easily read if they have a syntactical style similar to that already familiar to the reader. Texts to avoid are those with an unnecessary degree of complexity, typified by long sentences, large numbers of clauses per sentence, frequent qualifying and probability words. Conversely, compression and excessive abbreviation inhibit comprehension.

From this point of view, the best texts are those which use the formal language of the discipline in as simple a form as possible; without undue loss of meaning.

(f) Organisation

It is helpful to most students if set texts have a clear conceptual structure which is reflected in the layout and indexing system.

It seems that learning is also enhanced by the inclusion of so called 'Advance Organisers' which are simply such things as summaries of content and structure, pre and post questions, which are interspersed in the text.

Using Formulae to Predict Readability

There are about ten commonly used formulae which have various degrees of validity and reliability. Some are much easier to administer than others, and they all have limitations when applied to James Joyce, Gertrude Stein or highly codified scientific material. Generally speaking, it is only valid to apply a formula to narrative or expository prose, and whilst it is not suggested you should do so, it is useful to know how material from some subjects have emerged from such analyses.

English

At tertiary level there is little justification for choosing literary works on the basis of their readability, except perhaps when they need to be ranked in terms of degree of difficulty.

Maths

Generally maths texts are relatively easy to read as the words stress operations, whilst the concepts are portrayed in figures and mathematical symbols.

Science

Be careful to choose books which are consistent in their level of readability. Inexplicable variations may occur especially if texts are poorly edited. Investigators have revealed high degrees of inconsistency.

Social Science

Students have great problems with readability because of frequent:

(a) conceptual complexity and density of material
(b) poor style
(c) structural complexity and vocabulary and syntax
(d) lack of precision in the use of words
(e) changes of meaning of words in particular contexts
(f) heavy burden of new vocabulary.

So, once again, it is advisable to choose a text which deals with difficult concepts in as clear and simple a way as possible.

In addition to textual factors, the reader himself must also be considered in any discussion of readability. The students enrolled in a subject will have a range of individual prior reading experiences, so gross categoriations of readability may have to be reconsidered in the light of individual differences.

Furthermore, readability should not be regarded as a static phenomenon. It varies as a consequence of the experiences, skills and motivation of the reader. To illustrate this, consider the farmer who can analyse market conditions from studying farming newspapers and journals, but has difficulty in reading novels. Similarly, many lecturers experience a marked drop in their reading effectiveness when confronted with legal documents, technical manuals and budgetary information. In neither case would the uneasiness, lack of confidence, painstaking analysis and limited comprehension experiences when dealing with unfamiliar specialised material, be transferred to all reading situations.

So, if effective learning is to take place, there must not be a mismatch between the demands of the literature of the subject and the competencies, experience and motivation of the student.

The following checklist may help you in choosing texts from the readability point of view, subject, of course, to the content being suitable for your purposes.

Readability Checklist

(a) Is the print legible?

(b) Do the illustrations assist or detract from comprehension?

(c) Is the vocabulary as simple as is permissible?

(d) Is the level of conceptual difficulty and density appropriate?

(e) Is the syntax familiar enough to facilitate reading?

(f) Is the material organised and indexed in a logical manner?

(g) Do the students have experiences, competencies and motivations which suggest they can and will read the chosen texts?

AVAILABILITY

At the risk of stating the obvious, if students cannot obtain texts they cannot read them. The non-availability of texts is a recurring problem which seems to result from:

(a) The small size of the Australian market in specialist texts;

(b) Unreliability of shipping;

(c) Lack of communication between suppliers;

(d) Failure to place orders with suppliers;

(e) Remoteness of students.

In view of these problems, the utmost care must be taken to ensure that students are provided with as few difficulties as possible. It is advisable to:

(a) Check the availability of books with the bookshop, before making a final choice;

(b) Check with publishers/suppliers if the chosen book is both new and highly specialised;

(c) Beware of the availability claims of publishers representatives.

In addition to the problems of purchasing compulsory texts, students often encounter problems in obtaining library copies of recommended references.

Therefore, try to:

(a) Ensure books recommended for occasional reference are available from the College library;

(b) Indicate to students which texts are available from the College library;

(c) Inform librarians of anticipated demands for texts.

In the past, books have been chosen which:

* are not available in Australia

* are incomprehensible to most students

* are unrelated to the subject description or accompanying notes.

Hopefully by taking some simple precautions, problems such as these can be avoided.

Finally, having made an appropriate choice of text, some thought should be given to its use. Books clearly serve a variety of purposes, an edited series of readings will have a different function to a catalogue of factual information. However, it is important that whatever the style of the chosen text, it is integrated with the accompanying notes. A booklist and series of exam questions is inadequate for the majority of students. If the aim is to attempt to replicate for the external student all the learning experiences of the on-campus student, then the text will usually only be a substitute for the formal lecture. Seminars, informal discussions and other aspects of active student learning need to be substituted for with an appropriate set of notes.

Where possible, these notes should contain comprehensive guidance about the use of set texts. Questions may be asked so the student can check his comprehension, also summaries are helpful in assisting students to extract the main points. The choice of texts and their proper use are crucial factors in relation to a student's ability to complete his studies. It is in all our interests to ensure he does so.

The choice of textbooks can be a complex and time-consuming matter. However, in view of the relatively unsophisticated reading abilities of C.A.E. students, it is apparent that considerable numbers of students are hindered in their progress by being confronted with inappropriate texts.

STUDY GUIDES FOR TEXTBOOKS

The main problem in producing such guides is to link the author's knowledge of the field of study with the lecturer's knowledge of the student and the prescribed course of study.

Textbooks are rarely written for the precise group being taught and never for the individuals who are being taught. Therefore, the material in the text must be referred to in a manner which makes it palatable to at least the group being taught and preferably to individuals within that group. This can be achieved by considering the following functions of the learning material. The suggestions offered are by no means exhaustive; they are a sample of ideas which may help make standardised texts more appropriate for your particular students.

1. Arouse the student's interest and provide motivation for further study

The design and layout of the materials have already been fixed by the publisher, so the lecturer should focus on personalising the materials for his particular audience.

Suggestions:

(a) Point out why the text is relevant to both the professional concerns of the student and the course content (especially the assessment procedures).

(b) Ask the student to relate general ideas in the text to his own experiences or pre-existing knowledge.

(c) Explain which parts you found stimulating and why.

(d) Add information linking Australian conditions and the perspectives of the text.

2. Clearly define what is expected of the student

It is helpful to make clear why it is necessary for the student to study the text, and more specifically what will be expected of him in terms of knowledge, behaviours and attitudes.

Suggestions:

(a) Make a checklist of knowledge skills and attitudes that the student can use to monitor his own progress.

(b) Outline what the student should focus on in each section of the text.

(c) Summarise what the student should have learned after each section.

(d) Relate the content of the text to the formal assessment.

3. Make clear the overall structure of the material to be studied

Ideally the text chosen will have an appropriate structure, however, it may need to be classified and related to the relevant course or subject structure.

Suggestions:

(a) Draw up structures based on both the description of the subject and the contents of the text. Then link them together.

(b) Explain the logic of sectionalising the text.

(c) If the structure of the text is inappropriate, provide a better one, in which the content of the text may be located.

(d) Ask the student to make a diagrammatic representation of the conceptual network of the subject.

4. Guide the student carefully through the subject matter in the text

This involves guiding the students through the subject. The degree of prescription of the signposting procedure may vary greatly, both in response to the type of student and the nature of the subject.

Suggestions:

(a) Provide a study schedule showing order and duration of study for each section.

(b) Offer suggestions as to how each section may be best dealt with.

(c) Link together contents, objectives, assignments and activities.

(d) Relate all physical components of the subject e.g. notes, readings and texts.

5. Give the students something to do other than read

The majority of texts require only passivity on the part of the learner. Hopefully this passivity is an illusion, as the learner is supposedly actively relating new knowledge to pre-existing conceptual frameworks. Nevertheless, in many cases learning will be enhanced if a text is accompanied by some device meant to promote more obviously active learning.

Suggestions:

(a) Test the student's recall and comprehension.

(b) Ask the student to analyse parts of the text and write a personal synthesis.

(c) Encourage evaluation of the text.

(d) Require the student to relate ideas in the text to concrete examples and personal experiences.

(e) Make outrageous or controversial statements and demand reactions.

(f) Present fallacious arguments for the student to verify or refute.

(g) Require the matching of case studies with sections of the text.

(h) Present cloze exercises for completion.

(i) Ask for diagrammatic representations of verbally expressed material.

(j) Ask for matrices of concepts.

(k) Arrange postal simulations.

(l) Provide problem solving exercises.

6. Keep the students informed about their progress

Students require feedback in the areas of tuition, academic, administrative and personal counselling.

Tuition and academic counselling are the lecturer's main responsibility and are unlikely to be catered for by textbooks.

Suggestions:

(a) Encourage regular contact.

(b) Provide numerous self testing exercises to check progress through the text.

(c) Include easily-marked quickly-returned assessment items.

(d) Demonstrate remedial feedback loops related to self testing exercises.

(e) Provide feedback on audio tape in the form of comments on any work attempted.

7. Help students retain information and transfer it to novel situations

It is unlikely that the chosen text relates to the experiences and needs of your particular group of students.

Suggestions:

(a) Set work to link experiences with text.

(b) Ask for additional examples.

(c) Attempt to empirically support or refute arguments in the text.

(d) Ask repetitive questions, building up complexity.

(e) Demand problem solving approaches, using textual information.

8. Be aware of student progress and the worthwhileness of your subject

Such considerations are rarely included in texts, yet we need to know about the student's level of competence and the effectiveness of the course.

Suggestions:

(a) Ensure assessment is based on content of the text, i.e. is it valid?

(b) Begin with short easily-completed, easily-marked, lowly-weighted assessment items.

(c) Use variety of assessment procedures all based on the same content.

(d) Consider assessment in relation to student's total workload.

(e) Ask questions about degree of difficulty and perceived relevance of sections of the text.

(f) Ask for suggestions for improvement.

The most cost-effective package would consist of:

1. 10 page subject outline

   - contact addresses
   - assignments and self-assessment
   - residential schools
   - criteria for marking
   - objectives
   - conceptual framework
   - rules and regulations
   - important dates and schedule.

2. Text(s)

   - cost $30.00
   - easily obtained
   - relevant and comprehensive
   - readable
   - having appropriate difficulty
   - appropriately laid out.

3. Tape(s)

   - personal introduction
   - study guide
   - commentary
   - self-assessment.

4. Correspondence

   - rapid and comprehensive feedback on assignments and queries
   - tapes and written comments for each piece of work
   - standardised replies (depends on numbers) if possible.